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IN THE CLAIMS:

The current version of the claims is as follows. There are no claim amendments hereinbelow but a clean version is provided for convenience to the USPTO.

1. (Previously presented) An optical transmission path monitoring system for monitoring optical transmission paths by wavelength-division multiplexing probe lights with signal lights of a wavelength division multiplexing optical transmission system, said optical transmission path monitoring system comprising:

an optical fiber monitoring probe light for monitoring optical fibers which constitute some parts of said optical transmission paths; and

an optical amplifier-repeater monitoring probe light for monitoring optical amplifier-repeaters which constitute other parts of said optical transmission paths,

wherein a wavelength of said optical fiber monitoring probe light comprises such a wavelength as makes wavelength dispersion in said optical transmission paths negative, and a wavelength of said optical amplifier-repeater monitoring probe light comprises such a wavelength as makes wavelength dispersion in said optical transmission paths positive.

2. (Canceled)

3. (Previously presented) The optical transmission path monitoring system, as claimed in Claim 1, wherein:

said optical transmission paths have a zero dispersion wavelength which makes a wavelength dispersion of group delays over a full length of said optical transmission paths zero;

a wavelength of said optical fiber monitoring probe light is on a shorter wavelength

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side than said zero dispersion wavelength; and

a wavelength of said optical amplifier-repeater monitoring probe light is on a longer wavelength side than said zero dispersion wavelength.

4. (Previously presented) The optical transmission path monitoring system, as claimed in Claim 1, wherein:

said wavelength division multiplexing optical transmission system comprises two-core two-way optical transmission paths, and comprises a total of four probe lights including said optical fiber monitoring probe light and said optical amplifier-repeater monitoring probe light for delivering to each of two outward optical transmission paths which said two-core two-way optical transmission paths have; and

every one of said four probe lights has a different wavelength from the others.

5. (Previously presented) The optical transmission path monitoring system, as claimed in Claim 4, further comprising:

probe light generating means for generating said optical fiber monitoring probe lights and optical amplifier-repeater monitoring probe lights;

multiplexing means for multiplexing said probe lights with signal lights and delivering multiplexed lights to an outward optical transmission path;

loop back means for branching reflected light components generating from said probe lights from said outward optical transmission path and coupling the branched lights with signal lights on an inward optical transmission path; and

optical detecting means for detecting said light components transmitted by said loop

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back means and outputted from said inward optical transmission path, wherein:

said optical transmission paths are monitored on a basis of an output of said optical detecting means.

6. (Original Claim) The optical transmission path monitoring system, as claimed in Claim 5, wherein:

said optical detecting means optically detects by a coherent light detecting system said light components transmitted by said loop back means and outputted from said inward optical transmission path.

7. (Previously presented) The optical transmission path monitoring system, as claimed in Claim 6, wherein:

said coherent light detecting system comprises an optical homodyne detection system using said optical fiber monitoring probe light from said inward optical transmission path as a received light and a light partially branched from said optical fiber monitoring probe light from said probe light generating means as a local oscillating light.

8. (Original Claim) The optical transmission path monitoring system, as claimed in Claim 5, wherein:

said optical detecting means optically detects by a direct light detecting system said light components transmitted by said loop back means and outputted from said inward optical transmission path.

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9. (Previously presented) The optical transmission path monitoring system, as claimed in Claim 5, wherein:

said loop back means comprises two 2×2 optical couplers inserted into said optical transmission paths and mutually connected by one each of optical terminals.

10. (Previously presented) The optical transmission path monitoring system, as claimed in Claim 9, wherein:

said 2×2 optical couplers comprise light reflecting means for selectively reflecting said optical amplifier-repeater monitoring probe lights.

11. (Previously presented) The optical transmission path monitoring system, as claimed in Claim 5, further comprising:

means for alternatively selecting said optical fiber monitoring probe lights and optical amplifier-repeater monitoring probe lights for supply to said outward optical transmission path, and monitoring the optical fibers and the optical amplifier-repeaters on a time-division basis.

12-22. (Canceled)

23. (Previously presented) An optical transmission path monitoring method for monitoring optical transmission paths by wavelength-division multiplexing probe lights with signal lights of a wavelength division multiplexing optical transmission system, said method comprising:

using an optical fiber monitoring probe light for monitoring optical fibers which

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constitute some parts of said optical transmission paths; and

using an optical amplifier-repeater monitoring probe light for monitoring optical amplifier-repeaters which constitute other parts of said optical transmission paths,

wherein a wavelength of said optical fiber monitoring probe light comprises such a wavelength as makes wavelength dispersion in said optical transmission paths negative, and a wavelength of said optical amplifier-repeater monitoring probe light comprises such a wavelength as makes wavelength dispersion in said optical transmission paths positive.

24. (Canceled)

25. (Previously presented) The optical transmission path monitoring method, as claimed in Claim 23, wherein:

said optical transmission path has a zero dispersion wavelength which makes a wavelength dispersion of group delays over a full length of said optical transmission paths zero;

a wavelength of said optical fiber monitoring probe light is on a shorter wavelength side than said zero dispersion wavelength; and

a wavelength of said optical amplifier-repeater monitoring probe light is on a longer wavelength side than said zero dispersion wavelength.

26. (Previously presented) The optical transmission path monitoring method, as claimed in Claim 23, wherein:

said wavelength division multiplexing optical transmission system comprises two-

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core two-way optical transmission paths, and comprises a total of four probe lights including said optical fiber monitoring probe light and said optical amplifier-repeater monitoring probe light for delivering to each of two outward optical transmission paths which said two-core two-way optical transmission paths include; and

every one of said four probe lights has a different wavelength from the others.

27. (Previously presented) The optical transmission path monitoring method, as claimed in Claim 26, said method comprising:

generating said optical fiber monitoring probe lights and optical amplifier-repeater monitoring probe lights;

multiplexing said probe lights with signal lights and delivering multiplexed lights to said outward optical transmission path; and

detecting said light components outputted from said inward optical transmission path by branching reflected light components generating from said probe lights from an outward optical transmission path and looping back branched lights onto an inward optical transmission path,

whereby said optical transmission paths are monitored on a basis of an output of said optical detecting means.

28. (Previously presented) The optical transmission path monitoring method, as claimed in Claim 27, whereby:

light components outputted from said inward optical transmission path are detected by a coherent light detecting system during said detecting light components.

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29. (Previously presented) The optical transmission path monitoring method, as claimed in Claim 28, whereby:

said coherent light detecting system comprises an optical homodyne detection system using said optical fiber monitoring probe light from said inward optical transmission path as a received light and a light partially branched from said optical fiber monitoring probe light generated from said probe light as a local oscillating light.

30. (Previously presented) The optical transmission path monitoring method, as claimed in Claim 27, whereby:

said light components transmitted by said looping back and outputted from said inward optical transmission path are detected by a direct light detecting system during said detecting light components.

31. (Original Claim) The optical transmission path monitoring method, as claimed in Claim 27, whereby:

said optical fiber monitoring probe lights and optical amplifier-repeater monitoring probe lights are alternatively selected for supply to said outward optical transmission path, and the optical fibers and the optical amplifier-repeaters are monitored on a time-division basis.

32. (Previously presented) An optical monitoring apparatus for monitoring an optical transmission path, comprising:

a first probe light generating unit for emitting a first optical fiber monitoring probe

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light which monitors optical fibers constituting said optical transmissions path; and

a second probe light generating unit for emitting a first optical amplifier-repeater monitoring probe light which monitors optical amplifier repeaters constituting said optical transmission path,

wherein a wavelength of said first optical fiber monitoring probe light is such a wavelength as makes wavelength dispersion in said optical transmission paths negative, and a wavelength of said first optical amplifier-repeater monitoring probe light is such a wavelength as makes wavelength dispersion in said optical transmission paths positive.

33. (Previously presented) The optical monitoring apparatus as claimed in claim 32, further comprising:

a first probe light detecting unit for detecting a second optical fiber monitoring probe light which monitors said optical fibers; and

a second probe light detecting unit for detecting a second optical amplifier-repeater monitoring probe light which monitors said optical amplifier repeaters,

wherein a wavelength of said second optical fiber monitoring probe light is such a wavelength as makes wavelength dispersion in said optical transmission paths negative, and a wavelength of said second optical amplifier-repeater monitoring probe light is such a wavelength as makes wavelength dispersion in said optical transmission paths positive.

34. (Previously presented) The optical monitoring apparatus as claimed in claim 33, wherein:

the wavelength of said first optical fiber monitoring probe light differs from the

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wavelength of said second optical fiber monitoring probe light; and

the wavelength of said first optical amplifier-repeater monitoring probe light differs from the wavelength of said second optical amplifier-repeater monitoring probe light.

35. (Previously presented) The optical monitoring apparatus as claimed in claim 33, further comprising:

an optical coupling unit for coupling said first optical fiber monitoring probe light and first optical amplifier-repeater monitoring probe light; and

an optical switching unit for changing connections with said optical transmission path to said first probe light detecting unit or said second probe light detecting unit.

36. (Previously presented) The optical monitoring apparatus as claimed in claim 32, wherein:

the wavelengths of said first optical fiber monitoring probe light is on a shorter wavelength side than a zero dispersion wavelength which makes a wavelength dispersion in said optical transmission path zero; and

the wavelength of said first optical amplifier-repeater monitoring probe light is on a longer wavelength side than said zero dispersion wavelength.

37. (Previously presented) The optical monitoring apparatus as claimed in claim 33, wherein:

the wavelength of said second optical fiber monitoring probe light is on a shorter wavelength side than a zero dispersion wavelength which makes a wavelength dispersion in

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said optical transmission path zero; and

the wavelengths of said second optical amplifier-repeater monitoring probe light is on a longer wavelength side than said zero dispersion wavelength.

38. (Previously presented) The optical monitoring apparatus as claimed in claim 33, wherein:

said first probe light detecting unit optically detects by an optical homodyne detecting system.

39. (Previously presented) The optical monitoring apparatus as claimed in claim 33, wherein:

said second probe light detecting unit optically detects by a direct light detecting system.